REMARKS

This amendment is submitted response to the Office Action of September 29, 2005. Reconsideration and allowance of claims are requested. In this Office Action, language used in claims 2, 3, 10, 14 and 16 was objected to as informal. Therefore, this language has been altered as the Examiner has requested.

In examining the claims on the merits, the Examiner has rejected claims 1, 4, 6, 8, 9, 11, 15 and 17-23 under 35 U.S.C. 102(b) as anticipated by Corry, US Patent 5,784,050. The remaining claims 2, 3, 5, 7, 10, 13-14, 16 and 24-26 are rejected under 35 U.S.C. 103(a) as unpatentable over Corry in view of Bezryadin, US Patent 6,934,411. In response, Applicant has combined claims 1 and 2 as claim 1, and has edited several of the other claims including claims 15, 16, 17, 20, 22, 23, 25, and added new claims 27-28 to more clearly set forth the improvements provided by the present invention. Therefore, it is respectfully submitted that the rejections made by the Examiner be withdrawn.

As set forth in the present application, when generating a video signal suitable for transport to a color television set, it is common to convert the normal red, green and blue (RGB) color components often used in computers to represent images, into luminance and color difference signals YCdCr. Though some optimizations can be made to reduce the operations needed, in its most general form, this conversion requires a number of multiplications and additions. Since multiplications especially are expensive to implement, the intent and objective of the present invention are to use cheap color converters to reap the benefits of image processing in the YCbCr space, while still allowing the other required processing to be done in the RGB space, by enabling the signal to be easily, inexpensively, and quickly converted from one form to the other with little expense.

Therefore, the inventor has implemented a highly simplified though sophisticated system for making these conversions, the basic elements of which appear in the Figures 3A-3C and 5A-5C and are primarily implemented by addition and left- and right-shifting of the bits of data that represent the color components.

In rejecting the claims, the Examiner relies on the teaching of Corry which he cites as teaching the same equations being analyzed by the present inventor, and Bezryadin, who attempts to implement color conversion using left and right shifters. However, the evidence cited by the Examiner demonstrates the novelty, un-obviousness, and simplicity of the present invention. Corry was in possession of the basic equations for converting RBG to YCbCr utilized by the present inventor, as appears in the abstract and detailed description of the Corry reference. Further, Bezryadin was in possession of both sets of equations for making this conversion as appears at the top of column 2, and at column 1, line 30-60 of the Bezryadin patent; these equations also appear on page 1 of the present patent application. However, in implementing the conversion from the RGB space to the YCbCr space, Bezryadin, in possession of the same basic information as the present inventor, adopts a much more complex approach as clearly shown in Figures 2-9 of that patent. Moreover, Bezryadin himself states at the bottom of column 3, that his implementations involve several multiplications and additions.

The approach implemented in the present invention is much simpler; it incorporates a simple left shift by one bit and a right shift by two bits, a shorter shifting sequence than taught or suggested by Bezryadin. The claimed invention must be considered un-obvious and patentable, as Bezryadin in his many embodiments, although working from the same basic set of equations, did not teach or suggest the implementation now claimed.

Further, several of the claims in the present application, including claims 2, 27 and 28, introduce a further advantage of the invention wherein a numerical rounding operation is performed on the G component of the converted data prior to the right shifting of the sum of the G component and the R component, which enhances the accuracy of the result and prevents cumulative errors. See paragraph [0041]. As against these claims, the Examiner cites Bezryadin at column 4, lines 25-30. However, Bezryadin does not teach rounding as an approach to reducing area errors; rather, Bezryadin in the cited portion teaches that rounding errors may occur, and must be minimized without any suggestion that shifting of the bits can be used to eliminate the

rounding error. Specifically, as claimed, numerical rounding may be performed prior to the right shifting of the sum in order to avoid the rounding errors that Bezryadin's method introduces.

In view of the clear evidence of record, that Bezryadin, given the same starting information as the present inventor, has designed a far more complex implementation than that disclosed and claimed herein, and has failed to recognize the relatively simplistic approach to rounding to avoid accumulated errors, reconsideration and allowance of the claims are respectfully requested.

Respectfully submitted,

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